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A Comparison of Academic Achievement Between Slow Learning Grouped and Non-grouped Seventh Grade Students in West Puyallup Junior High School

William George Selig
Central Washington University

A COMPARISON OF ACADEMIC ACHIEVEMENT BETWEEN SLOW LEARNING GROUPED AND NON-GROUPED SEVENTH GRADE STUDENTS IN WEST PUYALLUP JUNIOR HIGH SCHOOL

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by

William George Selig

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APPROVED FOR THE GRADUATE FACULTY

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Dohn A. Miller, COMMITTEE CHAIRMAN

_____

Darwin J. Goodey

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Donald G. Goetschius

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CHAPTER I

THE PROBLEM AND DEFINITION OF TERMS USED

For years educators have been concerned with ability differences in their pupils. However, only in recent years have we begun to implement programs which would provide for ability differences (15:1).

The Puyallup School District is conducting a program under the auspices of the Education Act of 1965 (Public Law 89-10) designed specifically for slow learners at the secondary level. This program includes the subject areas of language arts, social studies, science, reading, and mathematics. As department chairman for the slow learner program in West Puyallup Junior High School, the writer has been partially responsible for the planning and implementation of the program.

The idea for this study came from an expressed need by the Director of the Modified Learning Program for a study to determine if there was any difference in the academic achievement of those slow-learning students in the modified learning program as opposed to those not in the program.

I. THE PROBLEM

Statement of the Problem

It was the purpose of this study (1) to compare the academic achievement of seventh grade slow learning students in the modified learning program with those not in the program; (2) to determine if

there is any difference in the academic achievement of the two groups. It was the investigator's hypothesis that there would be no significant difference in achievement due to grouping.

Importance of the Study

The slow learners compose the largest group of mentally retarded persons. Among the general school population approximately twenty per cent of all children can be considered slow learners. The slow learners provide one of the largest and most intense continuing problems facing the general classroom teacher (10:9).

With the increasing awareness of educators to the need for programs for slow learners, it is necessary that we evaluate those programs already in existence. The results of this study will provide one tool that could be used in the evaluation of the Puyallup Modified Learning Program.

Limitations of the Study

The study was confined to seventh grade slow learning students in West Puyallup Junior High School. Although it is recognized that other grade levels are involved in the Modified Learning Program, no attempt was made to compare and evaluate them because of the insufficient number of slow learners on the other grade levels in the regular school program. The study was limited to a selected group of seventh grade students at West Puyallup Junior High School.

The reading level of the students involved in the study appeared to be a severe limitation. Although they were very closely matched according to I. Q., there was no control of reading ability.

Another possible limitation of this study was the use of the S.R.A. Multilevel Achievement Series Test since it is designed primarily for use with students of average ability. It was used because it is the accepted evaluating device for the Modified Learning Program by the Puyallup Public Schools. This test is designed to measure knowledge in five areas--social studies, science, language arts, arithmetic, and reading.

II. DEFINITIONS OF TERMS USED

For the purpose of this study the following terms are defined:

Slow Learner. Those children whose I. Q. score falls between 75 and 90 on a verbal intelligence test and are achieving below grade level.

Modified Learning Program. The program established under the auspices of the Education Act of 1965 (Public Law 89-10) for the specific purpose of improving the education of slow learning students on the secondary level.

Grouped. Those slow learners who are placed together in academic classrooms because of similar ability and achievement levels.

Non-grouped. Those slow learners who are in academic classrooms with students of widely varied ability and achievement levels.

Academic Classrooms. Those classrooms in which students receive instruction in the areas of science, mathematics, language arts, social studies, and reading.

Regular Program. The program which provides the academic instruction for all students not involved in the modified learning program or special education classes.

CHAPTER II

REVIEW OF THE LITERATURE

Many educators have been concerned for years with programs for the mentally retarded. However, until recently few were concerned with the slow learner and his educational problem; therefore, systematic research in this area is limited. This review of literature will be a brief summary of the work done on characteristics, educational goals, teaching techniques, and grouping for the slow learner.

I. CHARACTERISTICS OF SLOW LEARNERS

Definition

The literature contains many varying definitions of the slow learner. For example, Featherstone (4:2) says, "There is no fixed standard or level of ability below which a pupil must be called a slow learner, but in common practice pupils with an I. Q. below 91 and above 74 are so labeled." Easterday defines a slow learner as "any child who is working below has assigned grade level" (3:462). "In the general school population, 15-17 or 18 per cent of the children can be considered slow learners. . . their maximum mental growth ranges from 11 years to 13 years 6 months" (10:9-10).

Physical Characteristics

According to Featherstone (4:12),

> in physical development slow learning children are about as variable and heterogeneous a lot as average children. But age for age they are a little less well developed on the average than normal children. They are a little less tall and heavy and a little less well proportioned, but not enough to cause special concern or require exceptional treatment. In matters of health; however, slow learning children as a group differ more conspicuously from average children. Defects of hearing and speech, malnutrition, defective tonsils, adenoids, and defects of vision are considerably more frequent than among average children. They seem to suffer not from a single well-defined complaint, but from a plurality of minor troubles all contriving to manifest and maintain a lowered state of bodily vitality.

In general then, it can be said that the slow learners are usually very much like normal children, with the following exceptions as reported by Franseth (19:6):

1. Superiority of motor abilities to abstract abilities;
2. Failure at team sports owing to inability to follow rules and think rapidly;
3. Slightly smaller stature than the average child;
4. Slightly more physical defects than the average child;
5. Tendency of health problems to be more numerous and acute which is frequently the result of inadequate health care.
6. A lack of stress on grooming, due in part to low socioeconomic levels and poor parental models.

Emotional Characteristics

Instincts and emotions of slow learners are very much like normal children but the following exceptions generally tend to be true according to

Tarver (20:8):

1. Frequent commission of such absurd or naive mistakes that behavior is erroneously construed to be deliberate disobedience;

2. Limited powers of independence, initiative and resourcefulness;

3. Lack of strong drives and interest;

4. Resistance to detailed and adequate plans;

5. Poor method of work attack;

6. A tendency to live only for the present;

7. Need for frequent motivation utilizing varied approaches;

8. Derivement of a great deal of pleasure from satisfactory completion of tasks;

9. Somewhat impulsive behavior aimed at immediate satisfaction;

10. Preference of gratification over long-range plans;

11. Emotional patterns close to those of normal children, but with variations in reactions to selected stimuli;

12. Short attention span for school activities;

13. Somewhat low persistence;

14. Need for more directions and more frequent opportunity to plan and to carry out activities;

15. A tendency to have slightly higher absenteeism in a traditional program but below average absenteeism in a prevocational or vocational school program;

16. A tendency to be problem children in a traditional academic

school program;

17. A tendency to become indifferent and rebellious when confronted with a situation which cannot be adequately met;

18. Early marriage of girls as an escape for inadequate school program and poor home situation;

19. Delinquency due to promiscuity among girls and petty thieving among boys;

20. A tendency to be followers rather than leaders;

21. Suppression of self-expression caused by repeated failures requiring re-teaching.

Tansley and Gulliford (18:80) also say that there are differences between bright and dull people, especially in those aspects of emotional life which are modified by or dependent on intelligence. They feel that as adolescents and adults they are less able to think out solutions to their emotional and social problems and, therefore, need development of positive attitudes and appropriate channeling of their emotions during school life.

Recognition and Identification

Many slow learners go through their entire school career without ever being properly identified. Howitt (9:6) suggests that the following points be used to help the classroom teacher recognize and identify slow learners.

1. He is generally a child with low academic ability who cannot think in the abstract;

2. He is usually poor in reading skills;

3. He is passive and seems uninterested;

4. He writes poorly;

5. He has little or no skill in interpreting data, statistics, graphs, charts, and maps;

6. He cannot differentiate the trivial from the important;

7. He cannot satisfactorily plan his work by himself;

8. He has poor study habits;

9. He has a limited span of attention. He tires of a subject or an activity quickly;

10. He tends to give up more quickly than the average student and if pressed too hard, may quit school;

11. He considers himself an academic failure.

II. EDUCATIONAL GOALS

General Objectives

The success of any program depends, in part, on how well that program attains its goals. Prouty (16:25) says, "The mission of education ought to be to give each child the chance to work at his own level and to progress as far and as fast as his ability to learn permits." Tarver (20:2) seems to agree with this statement and observes that in the case of the slow learner, this means that the college preparatory course is grossly inadequate. This does not mean that a watered down curriculum is adequate, but rather that different approaches, different

educational experiences and different outcomes must be sought. The end product in educating slow learners must be an individual who is adequately prepared for his world of work.

Specific Objectives

Slow learners along with all other American children are citizens of our country. They will help to create the society we all live in. No matter what their capabilities, our methods of teaching should be organized so as to develop in all of the children the following abilities in varying degrees:

1. Every child should have the ability to distinguish between right and wrong;

2. He should have civic consciousness;

3. He should have a critical mind;

4. He should have desirable habits of industry, proper work habits and attitudes;

5. He should have developed the ability to make use of his leisure time, according to his aptitude and interest;

6. He should have developed the ability to read with understanding, at least a daily newspaper.

7. He should develop an understanding of basic vocational and social requirements (7:5-6).

III. TEACHING TECHNIQUES

Slow learners have difficulty thinking in the abstract. They must have concrete experiences which relate directly to their immediate social needs. Because of the slow learner's inability to transfer his learning experiences independently, he must receive instruction which will allow him to transfer concepts from one life situation to another. Only in this way can education have any real value for the slow learner.

Greenholz (6:522-27) has described some general techniques for teaching slow learners in junior high school.

1. Provide paper and pencil because pupils have difficulty remembering directions and material from one day to the next. Have students leave textbooks in the classroom.

2. Provide opportunity to learn through several senses at a time.

3. Frequent changes of activity are necessary because slow learners have a short attention span.

4. Have a daily routine, with surprises.

5. Never put a child on the spot for an answer.

6. Check the pupils' work immediately. Give short tests over a concept just learned.

7. Make each dialy lesson complete in itself and assign little or no homework.

8. Do not force a child to work longer at a task than his brighter peers.

9. Prepare pupils for verbal problems by giving one or two

thought problems each day.

10. Make directions simple and try writing them on the board in the same place each day.

11. Try to get an early lunch schedule for them. Frequently these pupils have low energy levels due to improper eating habits.

12. Do not force a child if he says, "I don't want to."

13. Try to think of new ways to review concepts.

14. Use techniques employed by programmed texts by breaking content into small repetitive steps which are reinforced soon after presentation.

15. Break a child's question into a number of simpler ones.

16. Do not insist on verbalization if you think a child understands an idea.

17. Introduce a new relationship with the simplest numbers possible so that the pupil can concentrate on the concept itself.

18. Make one approach to a new concept per lesson rather than a multiple approach.

IV. GROUPING

Supportive

The fundamental purpose of grouping for slow learners is to give them a program which will have meaning for them and one which will help them become the best citizens their talents and ability permits (12: 77:88).

Wallena (24:61-67) says that in working with slow learners, you have to remember that it is their intellect that is impaired, not their emotions. They feel hurt, shame, indignation, and love like every other child. Therefore, the slow learner cannot help but feel shame, despair, and indignation when placed in a regular classroom where he has no chance of success.

The slow learner obviously cannot compete in the regular classroom with children of average and somewhat above average intelligence, but if he is placed in a classroom with students of about his same ability level he will maintain the pace and be strongly motivated to compete with other students in the class. Competition is a highly effective stimulant to learning, and ability grouping is the only way to have competition. Watson (25:44-45) for example, says you wouldn't enter a one-legged man in a race with Roger Bannister and expect him to try, so, how can you expect a slow learner to compete against a bright or gifted child in the regular classroom.

The slow learner's need for security, acceptance, and recognition have not generally been met in the regular classroom. Asking a child to go slow in a hard book does not solve his problems, and under present school programs it usually succeeds in alienating the slow learner by the time he reaches grade seven (1:28).

Slow learners are in school because society decrees that it is good for them to be in school (12:77-88). It is for us to demonstrate the truth of this assumption by giving them an improved learning situa-

tion which will recognize individual differences so necessary if children are to be given opportunities to achieve commensurate with their abilities and interests. Grouping provides this improved learning situation (17: 77-79).

Non-Supportive

Some authorities feel that grouping is detrimental to children, especially slow learners. Eash (2:25-7), for example, states that research findings indicate that ability grouping is detrimental to children on the average and lower ability level. He also states that grouping militates against the personal and social development of children. Johnston (11:207-12) feels that ability grouping is neither necessary or desirable and that a child placed in a low ability group is likely to have his negative attitude reinforced for lack of peers that he can respect. One point brought out by Franseth (5:15-17) against grouping was that on the average heterogeneous grouped classes made higher achievement gains than ability grouped classes. Hickerson (8:73-74) says that the reason for the higher academic achievement of heterogeneous classes is that the slow learner programs are poorly planned, academically weak, and basically uncoordinated.

Vergason (23:427-33), Passow (14:281-8), Olson (13:18-20), and Hammond (7:22-4) have stated in their studies that the research quantity on ability grouping is great, but the quality is irregular and the result so inconclusive that one must decide for himself whether or not he considers grouping to be good or bad. Featherstone (4:23) says:

> In the final analysis each school must size up its total situation and decide for itself what to do. In sizing up the total situation and in weighing the advantages and disadvantages of separate grouping, a number of questions must be asked. One group of questions raises points of difficulty in using separate grouping; another raises points of difficulty in not using it.

Critical Points in Using Separate Grouping

1. Do the principles of democracy preclude separate groups in spite of other considerations?

2. Can you group separately even if you wish to?

3. Are there teachers available who are prepared to do what needs to be done for the separated groups of slow learners?

4. Are there official regulations or unofficial and general community feelings and prejudices that make a policy of separate grouping doubtful wisdom?

5. Can you reasonably avoid the risks of exaggerating the importance of slow learningness as well as the tendency of separate classes to become catchalls for all kinds of misfits?

Critical Points in Not Grouping Separately

1. Is it possible to make the kinds of adjustments that are needed if slow pupils are to be well provided for in mixed classes?

2. Are the teachers willing and able to accept at face value a different kind and quality of participation from different pupils, or must all pupils be held to about the same standards of performance?

3. Is the school as a whole or the individual teacher, able to

device and manage a scheme of controlling promotion and progress and of making reports to parents that avoid exaggerated competition and persistent failure for the slow learner?

4. Are the special materials and other resources essential for slow learners available in sufficient quantity to permit using them in many classes?

5. Can activities outside the school be arranged for all pupils as frequently as is necessary for the slow learner (4:23)?

CHAPTER III

PRESENTATION OF DATA

In this chapter the methods, procedures and results of the study will be presented. First, the procedure for group selection will be explained. Secondly, the post-test will be explained. Next, this chapter will present the results of this study in six sections. The first five sections will follow the major divisions of the SRA Test: social studies, science, language arts, arithmetic, and reading. The final section will compare the results, determine the difference and test the difference with a *t* test to see if it is significant.

Group Selection

The students included in this study were enrolled in the seventh grade at West Puyallup Junior High School during the school year 1967-1968. The experimental group was composed of ten students chosen from Project 161 of the Puyallup Public School System, a program designed to aid slow-learning students at the junior high school level. The control group consisted of ten students chosen from the regular school program. Curriculum for both groups included language arts, social studies, mathematics, science, and electives. Students were selected for this program on the basis of I. Q. scores, taken from their permanent files, classroom achievement, and teacher recommendations. The number of students in the control group was determined by the fact that there were only ten avail-

able. Students from the Modified Learning Program were then matched with students from the control group to make up the experimental group. No effort was made to match them according to sex.

For the purposes of this study, the two groups were matched according to I. Q., age, achievement, and grade level. Table I shows that the groups had similar I. Q. scores. Therefore, they were considered to be matched groups.

TABLE I

OTIS I. Q. TEST SCORES OF EXPERIMENTAL AND CONTROL GROUPS

	Group A	Group B
Total N	10	10
I. Q. Range	77-92	74-95
I. Q. Median	88.0	86.0
I. Q. Mean	86.8	86.0

The scores on the tables indicate grad equivalents.

Pre-test

The SRA Multilevel Achievement Test, Form C, was administered to each group as a pre-test. This test consists of three overlapping versions--blue, green, and red. These parts are assigned according to grade level in grades four through nine. The green level is the appropriate

test for the seventh grade level. However, the authors (22:14-15) suggest the next lower version be used for students achieving one or more years below grade level. Thus, the blue version was used.

The pre-test was administered during the sixteenth, seventeenth, and eighteenth day of school. The testing was administered in the morning between the hours of nine and twelve in a classroom set aside for this purpose. The five sections of the test required thirty-three, thirty-three, seventy-nine, one hundred twenty-three, and seventy-seven minutes respectively.

According to the investigator's hypothesis, there would be no significant difference in achievement due to grouping. The raw scores from each group were averaged and the students from the slow learner program was found to have the lower average raw score on the pre-test.

Table II indicates that the experimental group had an average raw score of 51.8 and the control group had an average raw score on the pre-test of 52.2.

Post-test

On the 152nd through the 154th days of school, the students were re-tested using the blue version of the SRA Multiple Level Achievement Test, Form C. The investigator felt that the retention would be so slight over the length of the academic year that carryover would be insignificant. Also, no attempt was made to analyze test results with the students. Thus, their only exposure to the test was during the testing periods.

TABLE II

AVERAGE RAW SCORES OF EXPERIMENTAL AND CONTROL GROUPS ON SRA ACHIEVEMENT TEST

(Pre-Test)

	Total N	Total Prescore	Average Prescore
Experimental Group	10	518	51.8
Control Group	10	522	52.2

Social Studies

Table III indicates six members of the experimental group gained during the year in social studies. The sum of the differences between the pre-test and the post-test was 94, and the average difference was 9.4.

Table IV indicates seven members of the control groups gained in social studies during the year. The sum of the differences between the pre-test and the post-test was 84 and the average difference was 8.4.

TABLE III

DIFFERENCES BETWEEN PRE-TEST AND POST-TEST SCORES

ON SRA SOCIAL STUDIES SECTION

EXPERIMENTAL GROUP

Subject	Pre-test	Post-test	Diff.	Increase
1	55	71	16	+
2	31	31	0	0
3	36	54	18	+
4	44	66	22	+
5	53	51	-2	-
6	36	54	18	+
7	41	41	0	0
8	63	63	0	0
9	68	88	20	+
10	55	57	2	+
Totals	482	576	94	6
Average	48.2	57.6	9.4	

TABLE IV

DIFFERENCES BETWEEN PRE-TEST AND POST-TEST SCORES

ON SRA SOCIAL STUDIES SECTION

CONTROL GROUP

Subject	Pre-test	Post-test	Diff.	Increase
1	31	63	32	+
2	61	41	-20	-
3	68	81	13	+
4	31	48	17	+
5	48	73	25	+
6	101	84	-17	-
7	46	66	20	+
8	48	41	-7	-
9	57	63	6	+
10	56	71	15	+
Totals	547	631	84	7
Average	54.7	63.1	8.4	

Science

Table V indicates six of the members of the experimental group gained during the year in science. The sum of the differences between the pre-test and the post-test was -13 and the average difference was -1.3.

TABLE V

DIFFERENCES BETWEEN PRE-TEST AND POST-TEST SCORES ON SRA SCIENCE SECTION EXPERIMENTAL GROUP

Subject	Pre-test	Post-test	Diff.	Increase
1	77	55	-22	-
2	39	33	-6	-
3	42	44	2	+
4	68	84	16	+
5	58	61	3	+
6	42	51	9	+
7	48	53	5	+
8	108	95	-13	-
9	84	71	-13	-
10	71	77	6	+
Totals	637	624	-13	6
Average	63.7	62.4	-1.3	

Table VI indicates six of the members of the control group gained during the year in science. The sum of the difference between the pre-test and the post-test was two and the average difference was .2.

TABLE VI

DIFFERENCES BETWEEN PRE-TEST AND POST-TEST SCORES

ON SRA SCIENCE SECTION

CONTROL GROUP

Subject	Pre-test	Post-test	Diff.	Increase
1	39	42	3	+
2	53	55	2	+
3	63	65	2	+
4	51	48	-3	-
5	53	58	-30	-
6	101	71	-30	-
7	74	61	-13	-
8	31	51	20	+
9	68	65	-3	-
10	55	74	19	+
Totals	588	590	2	5
Average	58.8	59.0	.2	

Language Arts

Table VII indicates four of the members of the experimental group gained during the year in language arts. The sum of the difference between the pre-test and the post-test was 5 and the average difference was .5.

TABLE VII

DIFFERENCES BETWEEN THE PRE-TEST AND POST-TEST SCORES ON SRA LANGUAGE ARTS SECTION

EXPERIMENTAL GROUP

Subject	Pre-test	Post-test	Diff.	Increase
1	46	46	0	0
2	38	35	-3	-
3	53	38	-15	-
4	44	51	7	+
5	48	41	-7	-
6	34	33	-1	-
7	56	62	6	+
8	56	62	6	+
9	42	48	6	+
10	48	44	-4	-
Totals	465	460	5	4
Average	46.5	46.0	-.5	

Table VIII indicates six members of the control group gained during the year in language arts. The sum of the difference between the pre-test and the post-test was 37 and the average difference was 3.7.

TABLE VIII

DIFFERENCES BETWEEN THE PRE-TEST AND POST-TEST SCORES ON SRA LANGUAGE ARTS SECTION

CONTROL GROUP

Subject	Pre-test	Post-test	Diff.	Increase
1	48	53	5	+
2	39	42	3	+
3	53	51	-2	-
4	46	46	0	0
5	76	96	20	+
6	44	38	-6	-
7	62	52	-10	-
8	34	35	1	+
9	54	62	8	+
10	38	56	18	+
Total	494	531	37	6
Average	49.4	53.1	3.7	

Arithmetic

Table IX indicates seven members of the experimental group gained during the year in arithmetic. The sum of the difference between the pre-test and the post-test was 12 and the average difference was 1.2.

TABLE IX

DIFFERENCES BETWEEN PRE-TEST AND POST-TEST SCORES

ON SRA ARITHMETIC SECTION

EXPERIMENTAL GROUP

Subject	Pre-test	Post-test	Diff.	Increase
1	57	62	5	+
2	54	59	5	+
3	59	62	3	+
4	55	57	2	+
5	63	65	2	+
6	66	69	3	+
7	63	53	-10	-
8	57	55	-2	-
9	57	62	5	+
10	55	54	-1	-
Totals	586	598	12	7
Average	58.6	59.8	1.2	

Table X indicates eight members of the control group gained in arithmetic during the year. The sum of the differences between the pre-test and the post-test was 51 and the average difference was 5.1.

TABLE X

DIFFERENCES BETWEEN PRE-TEST AND POST-TEST SCORES ON SRA ARITHMETIC SECTION

CONTROL GROUP

Subject	Pre-test	Post-test	Diff.	Increase
1	47	57	10	+
2	54	59	5	+
3	63	74	11	+
4	62	69	7	+
5	58	69	11	+
6	53	59	6	+
7	58	58	0	0
8	45	35	-10	-
9	58	62	4	+
10	55	62	7	+
Totals	553	604	51	8
Average	55.3	60.4	5.1	

Reading

Table XI indicates eight of the members of the experimental group gained during the year in reading. The sum of the differences between the pre-test and the post-test was 97 and the average difference was 9.7.

TABLE XI

DIFFERENCES BETWEEN PRE-TEST AND POST-TEST SCORES

ON SRA READING SECTION

EXPERIMENTAL GROUP

Subject	Pre-test	Post-test	Diff.	Increase
1	68	65	-3	-
2	44	47	3	+
3	35	57	22	+
4	42	68	26	+
5	44	65	21	+
6	37	47	10	+
7	39	37	-2	-
8	61	68	7	+
9	72	76	4	+
10	52	61	9	+
Totals	494	591	97	8
Average	49.4	59.1	9.7	

Table XII indicates that nine members of the control group gained during the year in reading. The sum of the differences between the pre-test and the post-test was 126 and the average difference was 12.6.

TABLE XII

DIFFERENCES BETWEEN PRE-TEST AND POST-TEST SCORES

ON SRA READING SECTION

CONTROL GROUP

Subject	Pre-test	Post-test	Diff.	Increase
1	47	44	-3	-
2	44	65	21	+
3	49	81	32	+
4	42	63	21	+
5	59	65	6	+
6	58	73	15	+
7	44	63	19	+
8	42	44	2	+
9	56	61	5	+
10	49	57	8	+
Totals	490	616	126	9
Average	49.0	61.6	12.6	

Total Composite

According to Table XIII the experimental group had nine members showing increases in total composite scores. The sum of the differences between the pre-test and the post-test was 50 and the average difference was 5.0.

TABLE XIII

DIFFERENCES BETWEEN PRE-TEST AND POST-TEST SCORES

ON SRA TOTAL COMPOSITE SCORE

EXPERIMENTAL GROUP

Subject	Pre-test	Post-test	Diff.	Diff.	Increase
1	57	58	1	1	+
2	44	47	3	9	+
3	43	52	9	81	+
4	49	61	12	144	+
5	54	57	3	9	+
6	47	52	5	25	+
7	53	51	-2	4	-
8	61	62	1	1	+
9	58	64	6	36	+
10	52	64	12	144	+
Totals	518	568	50	454	9
Average	51.8	56.8	5.0		

Table XIV indicates that nine members of the control group showed gains during the year in the total composite scores. The sum of the differences between pre-test and post-test was 63 and the average difference was 6.3. The total composite scores was a compilation of the five subscores of the SRA Test.

TABLE XIV

DIFFERENCES BETWEEN THE PRE-TEST AND POST-TEST SCORES ON SRA TOTAL COMPOSITE SCORE

CONTROL GROUP

Subject	Pre-test	Post-test	Diff.	Diff.	Increase
1	45	53	8	64	+
2	48	54	6	36	+
3	58	69	11	121	+
4	51	57	6	36	+
5	59	72	13	169	+
6	58	56	-2	4	-
7	56	57	1	1	+
8	39	44	5	25	+
9	57	62	5	25	+
10	51	61	10	100	+
Totals	522	585	63	581	9
Average	52.2	58.5	6.3		

t Test

A t Test was applied to the results of the total composite section. Figure I, page 35, indicates that the t score obtained was .62 which is not statistically significant at the .01 level of confidence. The control group does not have a statistically significant higher level of achievement according to this test.

Summary

In this chapter methods, procedures, and results of this study were explained. First, the procedures for group selection were explained. Secondly, the pre-test used to designate the experimental and control groups was noted. Thirdly, the post-test was explained. Finally, this chapter reviewed results obtained when the classes were tested with the SRA Multilevel Achievement Test. In social studies the experimental group had an average difference of 9.4 while the control group had an average difference of 8.4. In science the experimental group had an average difference of -1.3 while the control group had an average difference of .2. In Language Arts the experimental group had an average difference of .5 and the control group had an average difference of 3.7. In arithmetic the experimental group had an average difference of 1.2 while the control group had an average difference of 5.11. In reading the experimental group had an average difference of 9.7 and the control group had an average difference of 12.6.

In the total composite score the experimental group had an average difference of 5.0 while the control group had an average difference of

6.3. A t test was applied to the total composite scores but no significant difference was found. The control group showed a larger gain than the experimental group. Chapter IV will summarize and conclude this study.

FIGURE I

FORMULA AND t-SCORE COMPUTATION

$$t(df = n_c + n_e - 2) = \frac{X_c - X_e}{\sqrt{\frac{n_c\ s_c^{\,2} + n_e\ s_e^{\,2}}{n_c + n_e - 2}\left(\frac{I}{n_c} + \frac{I}{n_e}\right)}}$$

$$t(df = 18) = \frac{1.3}{\sqrt{4.28}} = \frac{1.3}{2.07} = .62$$

1% level of confidence

$$.01^{t}18 = 2.88$$

CHAPTER IV

SUMMARY AND CONCLUSIONS

I. SUMMARY

It was the intent of this study to compare the academic achievement of seventh grade slow learning students in the Modified Learning Program with those not in the program; and, to determine if there was any significant difference in the academic achievement of the two groups. The students were chosen for the study on the basis of I. Q. scores.

The results of the study were based on a pre-test and a post-test from the SRA Multilevel Achievement Series. The blue version of the C form was used. Scores were obtained in the areas of social studies, science, language arts, arithmetic, and reading. The sum of these subtests was called the total composite.

A t test was applied to these results, but no significant difference was found. The t score of .62 was judged not significant at the .01 confidence level. The data obtained appears to justify the following conclusions.

II. CONCLUSIONS

This study was based on the hypothesis that seventh grade slow learners in the Modified Learning Program of the Puyallup Public School System at West Junior High School would show no significant differences

in achievement from those students not in the program.

In view of the information gathered, the hypothesis was proven to be valid. The required t score at the .01 level of confidence is 2.88 and the result of .62 did not exceed it.

From the results of this study, it is plain that the students in the Modified Learning Program are achieving about the same as the students not in the program. This would then indicate that the Modified Learning Program cannot be justified along the lines of academic achievement if, of course, the same type of curriculum is being offered.

III. RECOMMENDATIONS

1. A more comprehensive study could include more subjects over the three year span of the program in the junior high school.
2. A study of the effects of the Modified Learning Program on the attitudes of the students would be very valuable in the over-all evaluation of the program.
3. A tighter control over subjects contained in the study would be desirable. In today's mobile society, many students leave the district during the academic year.
4. A study correlating reading level and academic achievement would be valuable in choosing materials for the modified learning program.
5. A more suitable testing device should be chosen in order to better measure the objectives of the Modified Learning Program.

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